

REMARKS

The amendments for the specification, abstract and claims remove the objections to the drawings, abstract and title, and also remove the rejection under 35 USC 112, second paragraph.

With regard to the examiner's specific objection to recitation of "the respective characteristic curves" at claim 14, line 2, applicant respectfully points out that this phrase has antecedent basis at claim 13, line 10.

Claims 13-19 stand rejected under 35 USC 103 over more combinations of Mucher, Callahan, Longoria and Holley. Specifically, claim 13 stands rejected over Mucher in view of Callahan and over Longoria in view of Callahan. The Examiner has not applied Holley to claim 13.

The subject matter of this application, as defined in the independent claim 13, is concerned with a swing door apparatus for controlling movement of a swing door. As set forth in claim 13, the swing door apparatus comprises an operation shaft (corresponding to the shaft 5 in the case of the embodiment described with reference to the drawings, for connection to the swing door (by the swing arm 4) whereby the operation shaft turns in accordance with movement of the swing door. A common potentiometer shaft (designated 12 in the case of the embodiment shown in the drawings) is coupled to the operation shaft whereby the potentiometer shaft turns in accordance with the turning movement of the operation shaft. First and second potentiometers (13, 14) are coupled with the common potentiometer shaft and have at least substantially identical characteristic curves and are arranged in connection with the common potentiometer shaft so that the respective characteristic curves are shifted in phase with respect to one another.

Mucher discloses two potentiometers having respective shafts 8 and 9 to each of which is mounted a contact arm 12 which engages the peripheral portions of an adjacent resistance coil 7. The shafts 8, 9 are axially aligned and are coupled so that rotational

force applied to the shaft 8 is transmitted to the shaft 9 so that both contact arms 12 rotate together.

The examiner acknowledges that Mucher is silent concerning the characteristic curves of the potentiometers. Thus, Mucher does not disclose that the characteristic curves are substantially identical, or that the characteristic curves are shifted in phase with respect to one another.

The examiner relies on Callahan as disclosing first and second potentiometers 36, 38 having at least substantially identical characteristic curves and arranged in conjunction with a common potentiometer shaft so that the respective characteristic curves are shifted in phase with respect to one another. The examiner argues that it would have been obvious to one of ordinary skill in the art to apply the features of Callahan to the potentiometers of Mucher to ensure that a voltage output from the potentiometers is always available. Applicant respectfully disagrees with the examiner's analysis. Nothing in Mucher suggests any reason why it would have been desirable that the potentiometers should always provide an output signal regardless of the rotational position of the shaft 8. Mucher is concerned only with synchronizing the movement of the arms 12 so that as one arm is shifted or adjusted, the other is moved precisely to a corresponding degree. See column 1, lines 7-20. Moreover, the examiner identifies the axially aligned shafts 8 and 9 with the operation shaft and common potentiometer shaft of claim 13, respectively. The shafts 8 and 9 are connected to rotate exactly in phase with each other and thus the elements 8 and 9 may more properly be regarded as two segments of a single shaft. Applicant submits that the examiner may not properly employ a single shaft 8/9 to satisfy both the requirement of the common potentiometer shaft and the requirement of the operation shaft.

Further, claim 13 has been amended to specify a swing arm for connection to the swing door and to specify that the operation shaft is connected to the swing arm. Neither Mucher nor Callahan discloses or suggests a swing arm.

Longoria discloses a swing door apparatus but, as the examiner acknowledges, is silent concerning potentiometers. In fact, the sensor 61 referred to by the examiner is simply a limit switch that closes when the door swings a certain distance, for limiting the swing of the door between the open position and the closed position. See column 4, lines 32-61. Since Callahan employs potentiometers to detect turning of the steering shaft and Longoria neither refers to potentiometers nor discloses or suggests monitoring turning movement of the door, but only detects when the door has swung the desired amount from the closed position to the open position, applicant submits that there is no basis, other than hindsight, to modify the swing door apparatus of Longoria by incorporating the potentiometers of Callahan.

In view of the foregoing, applicant submits that claim 13 is patentable over Mucher, Callahan and Longoria, whether taken singly or in combination. Therefore, claim 13 is patentable and it follows that the dependent claims 14-19 and 22 also are patentable.

The arguments presented in support of claim 13 are applicable to claim 23. Therefore, claim 13 and the dependent claim 24 are patentable.

Respectfully submitted,

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